

91287365

## ABSTRACT

An audio calibration system includes control logic, an input device, a display, a noise generator, an inverter, a plurality of speakers, and a delay module coupled to each speaker. Upon receipt of a calibration start signal from the input device, the control logic directs the noise generator to produce substantially random noise which is then provided through the delay modules to each speaker. The inverter inverts the random signal to one of the speakers. Thus, in a two speaker system the sound emanating from one of the speakers is an inverted version of the sound emanating from the other speaker. At the points where the sound from each speaker combine, a "null" line is created as the two sources of sound cancel one another. The control logic controls the amount of delay introduced by each delay module into the sound provided to each speaker. By varying the amount of the time delay, the control logic can control the position of the null line to coincide with a listener's desired listening location. The preferred embodiment can be extended into a surround-sound system comprising five speakers. Each audio channel may include a time delay and the audio calibration system can be used to calibrate the null line produced by pairs of speakers.